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POISONING BY ARSENIC IN WALL-PAPER.

[Communicated for the Boston Medical and Surgical Journal.]

MESSRS. EDITORS,—At the last meeting of the Boston Society for Medical Improvement, Dr. F. S. Ainsworth reported a case in which a child was made very sick by poison sucked from the surface of a green concert ticket, which, as proved by my analysis, was covered with Scheele's green, or the arsenite of copper. By copious vomiting and the use of albumen, the poison was removed from the stomach of the child, so that a fatal result was avoided.

Inquiry has been made as to how much arsenic there was on that card, and I therefore send you the results of my analysis. A duplicate ticket of the same kind and color as the one sucked by the child was brought to me by Dr. Ainsworth, and it was found to be heavily incrusted and colored by Scheele's green, portions of which I scraped off with a knife, and reduced metallic arsenic from it by heating it to redness in a closed glass tube with black flux.

I then dissolved off the coloring matter from one half the card, and analyzed it quantitatively, and found that the proportions for the whole card were

Arsenious acid	1.07 grains.
Oxide of copper	0.41 "
Total	1.48 grains of Scheele's green.

Such a quantity of arsenic, if it had remained in the child's stomach, would certainly have proved fatal to life.

Tickets colored with these heavy opaque pigments are generally made of brown paper or pasteboard of inferior quality, the color covering this poor material. A stratum of prepared chalk, or of white lead, is generally laid on the paper as a basis for the coloring matter.

It is not uncommon to find wall-papers stained or coated with the above-named dangerous arsenical compound, and several instances of its poisonous influence have come to my knowledge.

One, I remember, in which I was consulted some ten years ago, was a case in which a gentleman was seriously affected by symptoms of arsenical poisoning from having slept in a room papered with hangings of this kind. The paper, analyzed by me at the time, was found to be stained with Scheele's green. It is uncertain whether the powdered pigment, which rubs off very easily, and is transported by the air, produced the poisoning, or that the effect was produced by the formation of arsenide of hydrogen which would form from humidity of the air decomposing the paste and the arsenical compound, but it is certain that persons have been made very ill, with all the symptoms of arsenical poisoning, owing to sleeping for a length of time in rooms papered with hangings of arsenical pigments.

Since there is another green used in paper-hangings, which may be mistaken from its color for Scheele's green, I would state that it is easy to distinguish chrome green from Scheele's by the action of a drop of muriatic acid. Chrome green is made by mixing Prussian blue and yellow chromate of lead. A drop of acid will take up the chrome yellow and leave unaltered the Prussian blue. Scheele's green and all the arsenical green pigments are entirely dissolved by the acid, and leave the natural color of the paper.

The arsenical pigments are also easily recognized by scraping off some of the pigment and dropping it on the surface of a piece of burning charcoal; the garlic odor of arsenic will be instantly perceived if it contains arsenic. If the pigment is dissolved from the paper by muriatic acid, add a slight excess of a solution of carbonate of potash or of soda, and the copper will be separated and a solution of arsenite of the alkali will be obtained. Decant or filter this and neutralize it with muriatic acid, or render the solution slightly acid. Then pour in an aqueous solution of sulphide of hydrogen, when the arsenic will be thrown down as the yellow sulphide of arsenic.

Or, if another test is desired, dissolve the pigment in nitric acid and treat with an alkaline carbonate, as before described, and apply a stick of nitrate of silver to the slightly alkaline solution, when a curdy and yellow arsenite of silver will be obtained.

Those who wish to obtain the arsenic in its metallic state, may readily do so by dissolving the pigment in dilute sulphuric acid, and then reducing it in Marsh's apparatus by hydrogen. The first tests named are all physicians may need to satisfy them they are dealing with arsenic; for a more full analysis they will be likely to apply to a professional chemist, but it is proper that they should possess the means of deciding instantly, on the spot, whether there is arsenic present or not.

It is obvious that some law should be made preventing the sale of poisonous papers and cards, for the rising generation run much risk if poisonous cards, frequently given to children as playthings, are allowed to be circulated among the people. Poisonous paper-

hangings are entirely unnecessary, since equally handsome colors may be obtained with safe materials.

It should be made known to the public, that some of the high-colored confectionary is painted with poisonous matters. Green arsenical pigments, chrome yellow and vermillion are frequently employed. A chemical friend lately informed me that he bought some lobster candy in the streets of Boston, which was richly colored yellow by the chromate of lead.

Glazed visiting cards (now happily out of fashion) were incrusted with white lead, a slow poison; and I have occasionally seen children's mouths bedaubed with this poisonous preparation of lead, from sucking visiting cards given to amuse them.

While we are watching our leaden aqueduct pipes with so much fear of lead poison, it is well to keep a look out on other sources from which we or our children may unwittingly get a dose of lead. All poisonous preparations ought to be legally prohibited in confectionary, and also in the preparation of cards, tickets, and wall-papers.

CHARLES T. JACKSON, M.D.,
Boston, March, 1861. *State Assayer.*

NOTE.—Since the above was sent to the printer, three new cases of injury, believed to have arisen from arsenical paper, have been brought before me, and I have analyzed the papers, which I found to be colored by an abundance of Scheele's green. In one of these cases, a lady, after cutting out the figures on 90 yards of green border paper, was severely poisoned, suffering from burning in the throat, nausea and diarrhœa. This case shows that the dust of Scheele's green, inhaled, was the cause and manner of poisoning. C. T. J.

DR. WARE'S LECTURES ON GENERAL THERAPEUTICS.

[Communicated for the Boston Medical and Surgical Journal.]

LECTURE III.

GENTLEMEN,—I referred, in the last Lecture, to the difficulties which beset the physician in coming to correct conclusions in therapeutics. It is well fully to recognize how great these difficulties are, and in order to this it will not be amiss to dwell upon them for a few moments longer. They arise partly from the immense variety and uncertain character of the facts upon which conclusions are to be founded; partly upon the difficulty of ascertaining and collecting these facts; and partly from the peculiar conditions under which they are observed.

The treatment of every case of disease may be considered as a sort of experiment: yet it is an experiment which can never be made a second time under the same circumstances. In this respect it differs essentially from experiments in other branches of science, chemistry for example. If the chemist doubt as to any

result at which he arrives from an experiment, he has but to repeat it; and he is confident that he can do this as often as he pleases under exactly the same conditions. These conditions are capable of being precisely determined. His subjects are substances whose proportions and relations are definite and constant—all the materials employed are equally well known, and every detail may be submitted to the rigid scrutiny of weight, measure, number and time.

How different is it with that experiment which the physician performs in the treatment of disease! His subjects—the bodies of living men—are no two of them alike. He cannot even be sure that any one of them is alike on two successive days, and yet he cannot tell why they are unlike, nor in what they are unlike. He gives to two patients, for instance, with the same disease, on the same night, a common pill of calomel, antimony and opium. One of them vomits and is purged severely; the other perspires and sleeps quietly. He gives the same pill to a single patient on two successive nights. He gets, on these successive nights, these two different results in the same subject. This is only a sample of the uncertainties which meet us at every turn. They are of daily and hourly experience. Every man's constitution is as perfectly individual as his character; and, as we can only imperfectly guess how motives will influence his mind, so we can only as imperfectly guess how remedies will act upon his body. We can weigh and measure nothing but the medicines we give, and we can have no assurance that the same measure and weight will have the same effect at any two consecutive periods. Then, too, the body is constantly liable to the influence of causes that may modify its condition—such as heat, cold, weather, electricity, food, state of mind; and yet when changes occur, it is impossible to say whether they are owing to these causes, or whether they are simply parts of the disease, or are due to medicines that have been given. The chemist performs his experiments with elements which are constant and equal. The physician his, with those which are inconstant and unequal. The chemist, in the tranquil solitude of the laboratory, is concerned only with the impassive atoms of the inorganic world. The physician, in the busy sick room, is concerned with suffering bodies, in which beat anxious hearts. The experiment of the chemist, as I have said, may be indefinitely repeated—the experiment of the physician, never. The chemist can make the conditions under which his experiment is performed—the physician must accept them as they are offered. The same conditions can never be restored. His conclusions can, therefore, be only approximations to the truth. He can only suspect, while the chemist knows; he can only conjecture, while the chemist demonstrates.

This is a strong, and yet, in the main, a true picture of some of the difficulties attending on judgment in medicine. Yet it is

not to discourage us, for they are not peculiar to medicine, but belong in some degree to all subjects where the living, thinking and feeling man is one of the elements to be taken into account. In spite of them, we are still able to arrive at valuable practical results. Mankind are possessed of a strange and mysterious power, almost an instinctive one, of comparing facts, balancing probabilities, striking averages, and thus of arriving at general results with tolerable accuracy. The difficulties to which I refer lie, for the most part, within assignable limits. Although there are great differences in human constitutions, there is still a general resemblance. There is a general resemblance, too, in the way in which they exhibit disease and are affected by remedies. They are similar, though not identical. Small departures from a given standard are universal. Wide departures are comparatively rare. Observation and experience, under the guide of that latent and unconscious instinct of generalization to which I have referred, permit us to form judgments approximating as much to true ones as those upon which we are obliged to act in many of the concerns of life.

Great uncertainty attends the collection of the facts of a case, and here is another source of difficulty in judgment. I do not now refer to an imperfection proceeding from inattention, indifference or want of knowledge in the observer, but to the necessary impediments to a full and accurate investigation. A general sketch of these impediments will serve further to illustrate the difficulties to which I refer, and also to put us on our guard against sources of error. We get our information concerning the facts of a case, especially its symptoms, partly from our own observation, partly from the narrative of the patient, and partly from the account given us by the nurse and the friends. Here we have three distinct sources of information, and the value of that derived from each depends upon the capacity of the observer and his opportunities. The physician is trained to observation. He is calm, dispassionate, and, to some extent, disinterested. He knows what to look for; he will consequently often see what a common bystander will overlook. He sees symptoms in their true relations, and in their actual degree, whilst, in both these respects, others are liable to fall into great errors. But then his inspection of the patient is transient, occasional, often hurried. He sees things, therefore, only as they exist at a particular moment, and knows from his own observation nothing of the changes they may undergo from hour to hour, or of other appearances which may present themselves when he is absent. For a knowledge of these he is obliged to depend on the second-hand evidence he gets from others.

The patient, on the other hand, is not a dispassionate or disinterested, and often not a calm observer. But he can tell us of what no other one can—his feelings and sensations. He is also a second witness to many of the facts we get from the nurse and

friends. These give their impressions as to feelings and sensations as derived from observation of the patient. Both accounts are liable to be erroneous, and we are obliged to make up our opinion by setting one against the other, and correcting one by the other.

The nurse and the friends see less clearly and distinctly than the physician, but as they are constantly present they are witnesses to what occurs during his absence—to the evacuations of the patient, the effects of food, of motion, the state of his mind, his sleep, &c. &c.

There are still other ways in which we are deceived, not absolutely and necessarily connected with the inquiry itself, but dependent upon the character of the patient, his nurse, his friends and ourselves. The patient's anxiety, or timidity, or excited imagination, or want of fortitude, lead him to misrepresent or exaggerate his symptoms—such as the degree of pain, of weakness, of watchfulness, &c. He conceals or undervalues symptoms, lest he should be thought sicker than he is—or he magnifies or even imagines them, lest the severity of his malady should be undervalued. The standard of description varies in different persons according to temperament. With some, that pain is agony and torture, which by others is spoken of as troublesome and annoying. With some, a morbid love of excitement and sympathy, a fancy for being thought very sick, leads unintentionally or designedly to extravagant forms of speech—whilst in others, the opposite frame of mind prompts to speak slightly of formidable symptoms. The former is more frequently observed among women—the latter, among men.

The variety in the characters, interests and relations of those about the sick, lead to analogous errors in the views they entertain and the descriptions they give. The young timid and anxious mother, who watches by her infant through a long and dreary night, will alarm you by a frightful narrative of startings and cries and cramps and spasms, when the calm and experienced nurse has seen only a little restlessness and fever, and the indications of wind in the bowels. Some friends are anxious and fearful of evil, and look only on the dark side; others are cheerful and hopeful, and can never realize the presence of actual danger. They interpret symptoms according to their fears or their hopes, and as they interpret they describe. The amount of intelligence, the capacity for the use of language, vary indefinitely, and consequently the description of circumstances of time, number, quantity and color, may vary far from the truth. One watcher will tell us that the patient has been up and down all night, when another simply speaks of three or four discharges from the bowels. A few spoonfuls of blood will be represented as half a pot-full; a simply dark color of the fæces, as pitch black; and other variations are there, equally wide from the truth, and equally perplexing.

The imperfect knowledge of the conditions of sickness among

those who have the care of the patient, is a fruitful source of error in the description of symptoms. To inexperienced persons, disease has often something mysterious and awful in it. They do not know what to expect; they have no power of appreciating the character or the relative importance of what they witness, and there is consequently a vagueness and often exaggeration in their descriptions, or, on the other hand, important omissions in the account they give of the phenomena which have occurred. The most common occurrences of disease, the most ordinary symptoms, alarm them as extraordinary and frightful. They will fancy a patient dying, whom you find in a peaceful slumber—in a raging fever, when he has merely the headache or the moderate paroxysm of fever which is so common in acute diseases—or delirious, because he utters merely a few incoherent words on awaking from sleep.

In the sick chamber, whilst it is generally the place where are exhibited the noblest and most tender feelings of our nature, we may encounter those which are frivolous, mean and detestable. Thus we sometimes detect in patients upon the sick bed, the same affectation, the same love of display, the same craving for being objects of attention and interest, which distinguished them in health. Among the friends are often those who enjoy the parade and excitement which so often attend a severe fit of sickness; whose self-esteem is gratified by the importance attached to it; who love to be soothed by that sympathy and those kind offices which dangerous disease is sure to call forth. Besides these, we meet those at the bed-side who have a keen, almost idiosyncratic relish for the darker shades of life, and who experience a not unpleasing stimulus in the presence of danger and suffering, somewhat like that which prompts so many to rush to the scene of a fearful accident or to that of a public execution. All this necessarily interferes with accuracy of observation on our part, and colors, insensibly, the history we get from others. There are even those occasionally around the patient to whom a fatal termination of his case is a desirable event; sometimes even those who distinctly wish it, and that from various causes. To one, his death will be the means of a positive advantage; to another, it will be the removal of a trouble, a burden, or a disgrace; to another, he has been an object of distrust or aversion, or a source of unhappiness—whilst some one of those ravens that croak in sick rooms "has said he would die from the very first," and expects the gratification of a melancholy pride in the accomplishment of the prediction. Such feelings are not often cherished; they are seldom, such is human self-deception, perceived to exist; if perceived, it may be with pain and self-reproach. Nevertheless, their existence, latent as they are, and subtle as is their operation, can be sometimes detected; they influence the judgment of symptoms, and the representations given of them. We may be placed in circumstances of

still greater difficulty of judgment; for we may be compelled, unknown to ourselves, to stand side by side with the murderer of our patient, who, of course, is interested to blind us as to the cause of his death, and defeat our efforts to prevent it.

The morality of the sick-room is not always of the choicest kind. To deceive the physician is regarded, too often, as no sin by those whose consciences are tender enough upon every other point. Hence statements will be made, known to be false, concerning a variety of circumstances of no inconsiderable importance, especially during convalescence. Professed nurses, in particular, are exceedingly prone to this species of iniquity, and require to be regarded with a watchful eye. I would utter no word of reproach upon this most useful and much enduring class; and I have known among them many of the best specimens of woman kind—honest, truthful, self-sacrificing and tender-hearted. Their temptations are many—their position difficult—their hardships great. Their ranks are necessarily often filled by those who are but illy fitted by education, manners or personal character for the responsible duties they assume. The relation of the nurse is peculiar and delicate. It is too often assumed that if anything goes wrong with the patient, somebody is in fault. There are many persons in the world—in the sick room, as everywhere else—who, when evil occurs, take comfort in laying the blame upon somebody. On these occasions, the nurse is too often the scape-goat, and she is sometimes most unjustly and cruelly judged. It is our duty, wherever truth and honesty will admit, to shield her good name, as upon it depends, often, her own living and that of others. It is painful to be obliged to say that her reputation is sometimes sacrificed in order to defend that of the physician from a fancied imputation, and a meaner act can hardly be committed.

It is necessary, however, to be on our guard in our intercourse with nurses, and to learn how to judge of their characters, for in various ways, intentionally and unintentionally, they may seriously mislead us. They are somewhat apt to think well of their own knowledge of diseases and remedies as compared with the physician—especially if he is young in practice—and to interfere with his directions and depreciate his opinions. They have often theories of their own, which influence their observation and lead them to give their judgment of a fact, instead of the fact itself. With some, their predominant object is to commend themselves to your good opinion; and with others, to make it appear that they know more than you do, to show themselves off to advantage, to give such an account as will redound to their own credit. The fear of being blamed sometimes leads them to misrepresent or conceal occurrences of importance, whilst the expectation of commendation induces a disposition to exaggerate or invent. Thus, in various ways, they may seriously impede the understanding of a case. Still, on the other hand, the aid of an experienced nurse is often

invaluable, and her opinions on certain points are sometimes more just than ours, especially with regard to young patients, and also with regard to the severity and amount of danger in a case.

And here let me interpose a word of counsel, suggested by the subject, the observance of which may save you some uncomfortable moments, and your patients some hard thoughts. Do not assert too confidently that a sick person is in no sort of danger, when all around him are confident that he is. Especially in the case of the sick children of young mothers—and these constitute no inconsiderable proportion of our practice—do not treat slightly, especially do not ridicule, their alarms. Alarms they are, even if unfounded; they can be soothed, but not removed. However causeless they may be, conceding something will sooner dispel them than the boldest assertion; whilst, such is the fallibility of prognosis, it may happen that in a case which really exhibits no formidable symptoms, they will be developed as it advances; and it may also happen that unfavorable indications are so fitful and transient that they are never exhibited to us, and yet impress themselves strongly on the minds of those who are in constant attendance. Whenever, then, those around the patient are convinced that the danger is great, it is unwise to assert authoritatively that there is none at all. It is better to admit their view of the case to be possibly the true one—which it sometimes happens to be. And it is, I believe, easier to allay apprehension and soothe anxiety and disquietude, where you in some measure partake of them, than where you entirely deny any cause for their existence. There is hardly anything which friends find it so hard to overlook, as the slight or ridicule of fears which the event proves to have been well founded.

There are many causes of error, in getting the facts of a case, in ourselves. These are to be recognized, and fortunately they can be, to a good degree, obviated. A case may be approached with a strong preconception as to its nature. A few prominent symptoms may catch our attention at first, and suggest a peculiar view of it so as to produce such a preoccupation of mind as to vitiate our whole investigation. Or our previous knowledge of the individual may have a similar influence. You know, for instance, that such a woman is extremely nervous, and is constantly fancying herself the subject of some dreadful malady. If called to her, you approach her bed-side with the conviction that whatever you find will be of nervous origin, and you are insensibly led to put this construction on whatever you discover. In this way, the character of her case may be misjudged, and a very severe disease be taken for a very slight one.

Or the state of mind may prejudice investigation in another way. One may be especially interested in a particular disease, or have just read some very impressive book which treats of it, and go to the bed-side with the mind full of it. Now, as in

many diseases, all the organs of the body are more or less the seat of symptoms, there is a propensity to throw together and insulate those that correspond to the malady we are in search of, to overlook or throw out of sight all others, and to think we have found it. A new, striking and popular treatise on any disease, is certain to be followed by a great prevalence of that disease. We put leading questions—we direct the patient's attention to the suspected organ, and procure an acknowledgment of the existence of symptoms which we have ourselves suggested. This is very likely to happen with regard to organs whose sympathies are widely extended, and the symptoms of whose maladies are numerous and heterogeneous—as the stomach and the womb. Patients and nurses are easily led to aid us in this work of self-deception. They have observed imperfectly—they have no definite ideas of what they have observed, and, when at a loss for an answer, they will fall in with our own train of inquiry and reply as they see we are expecting or hoping they will reply.

A hasty, an indifferent or a random mode of investigation may lead us to overlook symptoms that are not prominent--that are even latent—and yet should have an important bearing on our judgment. Such, among many examples, are the presence of sugar or albumen in the urine. They do not obtrude themselves on the attention either of the patient or physician—they are latent; they must be sought for at the expense of a little trouble. But in reality they are each often the key to the character of the case in which they appear, and decide its result. Their detection will serve to clear up what was before a vague and promiscuous mass of symptoms.

There is a source of error of a different kind in forming our judgment of the results of treatment, so far as this consists in the administration of medicines. It is difficult to be sure of the qualities of the articles which we give. Those from the vegetable kingdom are subject to great variations of strength. We give nominally the same thing, but our specimen, in a given weight, may contain twice the quantity of that peculiar element upon which its efficacy depends, that another does. Plants are liable to change by time, or in the process of preparing them for use. They may have grown in the shade, or in an unfavorable soil; their juices may be imperfectly elaborated; they may be gathered in an unripe state. Their essential principles may, it is true, be chemically extracted and presented of a more uniform composition and strength, as in the case of quinine and morphine, but even these may be imperfectly prepared or be adulterated. Mineral drugs are not liable in the same way to variability of composition. Their preparation may be perfectly uniform and exact, but they are still capable of great adulteration, and to an uncertainty as to the judgment formed of their effects on the body, and their influence on disease.

[To be continued.]

TRIAL FOR MURDER BY POISONING.

(Continued from page 106.)

Augustus A. Hayes.—Reside in Boston. Consulting and analytic chemist and State Assayer. Have been a consulting chemist more than thirty years. Have studied the subject of poisons in connection with their elimination from bodies and stomachs, for more than twenty years. Have been very frequently employed in analyses in that time. I cannot state the number of examinations made for poisons in general. Have had a number of occasions to examine for strychnia, within last five years. I received, in March last, a package from Elisha A. Heath, a physician's travelling case, secured by a spring catch, containing three or four packages and a note from Dr. Hubbard. (Note produced.) The package contained a bottle, containing a stomach and its contents, sealed; a package wrapped in paper, said to be a liver; a glass jar, of which the sealing had been burst by gases, containing a portion of intestines; and a bottle containing a fluid. The last were not examined. Examination was only upon stomach and contents.

I opened the jar and commenced the examination on the 19th of March. My notes were made as the examination progressed. On opening the bottle, the stomach was found reposing in about three to three and a half ounces of yellowish gray liquor. The stomach was removed, drained and spread upon a plate of glass, placed upon two clean porcelain bowls. It was then cut open, longitudinally, and spread out for physical examination. The inner surface was examined carefully for any adhering bodies, using a lens, without detecting any adhering foreign body, excepting a few particles of bran from flour and grain. The general appearances presented were, the upper part of the stomach reddened, and vessels gorged with blood. Very little of the mucous lining of the stomach remained at that part, and the delicate textures presented the appearance of having been acted upon. There was a wrinkled and contracted surface which did not penetrate through the outer covering or skin, and nowhere was the outer covering broken so as to exhibit marks of active corrosion; the other parts of the organ presented a greenish-gray color, the mucous membrane being somewhat slimy; at one part decomposition had already commenced, and the bloodvessels were filled with a dark greenish-black fluid. The application of weak alcohol to the surface did not produce any more extended reddish color.

The stomach was then chopped fine, and one fourth its volume, as near as could be estimated, was reserved for further experiments, and placed in alcohol. The fluid which had drained from the stomach and passed from it during the examination, had been allowed to repose, so that any heavy particles in it would have subsided to the bottom of the vessel. The more transparent part having been decanted, the deposit which had taken place was exa-

mined for solid heavy bodies, but none were discovered. There were some small grains of starch and particles of bran, and a few filaments, probably derived from the food. The fluid was divided, and one fourth part reserved and mixed with the reserved portion of the stomach. The other part was put in a suitable vessel, to which the larger portion of the stomach was added. It was now found that the reaction on test papers was decidedly acid. About three times the bulk of the whole mass, in quantity, of alcohol was added, and the whole brought to a temperature of 120° Fah. in a bath of warm water. A part of the filtered portion of this fluid was mixed with its bulk of pure hydrochloric acid, placed in a flask, which it nearly filled. A slip of bright copper foil was put into the fluid, and the flask, partly closed by a cork, was heated until its contents boiled, and the boiling continued about fifteen minutes. The bright surface of the foil was slightly discolored, but a subsequent examination proved that no metal had been deposited upon the copper. This is the first step for the discovery of metallic poison, which was indicated by the red color of the stomach.

In proceeding further in testing for metallic poisons, a portion of the alcoholic solution of the stomach and its contents was subjected to a current of hydrosulphuric acid gas for several hours, and the same portion was mixed with sulphide of ammonium, without discovering any traces of metals influenced by these tests. This closed the examination for metallic poisons in this stage of the process.

In the next step an alcoholic solution of oxalic acid was boiled, with the fluid contents of the stomach. This solution was mixed with an excess of hydrate of lime, evaporated nearly to dryness; the dry mass extracted by alcohol, again evaporated, and treated with alkaline ether. The ethereal solution afforded a very slight trace of strychnia.

The solid mass of the stomach, treated in the same way, gave more considerable indications, and enabled me to obtain the chromate of strychnia. By this course, the presence of strychnia was determined in the fluid and in the solid portions of the stomach, and the united products with the tests for strychnia corresponded in their indications with strychnia of known purity.

The final separation of the strychnia from the solid part, and some residue remaining of fluid part, was effected by acting upon the whole with the soft hydrate of lime, which at a moderate temperature resolved the solid part into a semi-fluid, and completely obliterated all organic structure. The soft mass was dried at a temperature below 100° Fah., reduced to a fine powder, and boiled with 94 per cent. alcohol, this operation being several times repeated, after the clear liquors had been successively withdrawn. The clear liquors were distilled by water bath, and the dry residue, left in the retort, was mixed with slight excess of diluted sul-

phuric acid. The solution thus obtained was warmed sufficiently to melt wax, and some purified wax with a little stearic acid were added, mixed thoroughly, and the whole cooled by cold water. The clear liquor which remained, evaporated to a small bulk, were mixed with soda and pure sulphuric ether; the whole warmed for a few hours, and allowed to become cool. The clear etherial liquor was then decanted into open capsules of glass, and as the ether evaporated, feathery and prismatic crystals were left upon the surface of the glass. These crystals were dissolved in alcohol, the alcohol evaporated, and another form of crystal was obtained, which I have here. (Shown to the Court and Jury.) In this bottle is the sulphate of strychnia, formed from the crystals of strychnia, found in the solids of the stomach. (Shown to Court and Jury.)

Another portion of the same crystals was used in the experiments for determining what they truly were. The characters of the crystals as obtained were as follows:—when dissolved in dilute sulphuric acid, a drop mixed with ammonia gave a precipitate which became crystalline; with potash, a precipitate partly soluble in an excess; with chlorine, a curdling white precipitate; with the terchloride of gold, a bright yellow precipitate; with bichloride of platinum, a bright yellow precipitate; with iodine, a brown-yellow precipitate, soluble in alcohol; with iodide of potash, a white precipitate; with bichromate of potash, a crystalline yellow precipitate; with neutral chromate of potash, nearly the same; with tannic acid, a bulky precipitate of a white color; with sulphocyanide of potassium, it gave groups of crystals; bromine, a yellow flocculent precipitate. A very small portion of the crystals dissolved in water communicated an intensely bitter taste, leaving a metallic impression in the mouth. Nitric acid formed with the crystals a beautiful crystalline salt; sulphuric acid, a prismatic salt. These are the characters of strychnia; and another remarkable character is, that when the crystals of the sulphate are mixed with the powder of bichromate of potash, and a drop of strong sulphuric acid is added, a fine bluish purple color is produced, which fades through shades of red brown to yellow brown. (Experiments objected to, and finally ruled out.)

It is one of the remarkable and distinctive characters of strychnia and its salts, when brought in contact with a nascent oxygen, to produce a deep and beautiful blueish violet color; and in variations of the experiment, this reaction distinguishes it from all other bodies. This reaction has been obtained on the alkaloid and its salts repeatedly, and from various solutions; the results proving beyond any doubt that the substance separated by the different processes is the alkaloid strychnia, or strychnine as it is commonly called.

The final step was that of determining the weight or approximate weight of the alkaloid found in the stomach and its contents. For this purpose, the fourth part of the whole mass, which had been reserved, was taken, and by the lime process $\frac{6}{100}$ of a grain

of crystals of strychnia were obtained. This would give $2\frac{48}{100}$ grains as certainly present. Of this quantity, three fourths of the whole weight was contained in the solid part of the stomach.

A considerable quantity of sugar was found in the experiments made for the purpose of separating the alkaloids. There is in this bottle $2\frac{49}{100}$ grains of strychnia. This weight of strychnia may be dissolved in an eighth of a pint of whiskey. If dissolved in liquor with a considerable quantity of sugar, it would disguise the taste in part. I applied a large number of tests besides those I have enumerated, which were quite as satisfactory. There were no exceptions to distinctive action in any of the tests. The substance separated was compared with strychnia of known purity at the same time and with the same tests, and afforded the same results in both cases.

Have no personal knowledge as to *post-mortem* appearances; my knowledge is derived from books. I think Dr. Taylor states that no particular appearances after death prove poisoning by strychnia. The most common appearance is a bended state of the spine, as the result of spasms and convulsions; the muscles firm, hands contracted, and a retention of this rigidity for some time after death. Don't recollect of any other. Have rarely attended to this branch of the subject.

Cross-Examination.—I have examined other stomachs previous to this. I cannot give names here. My practice is to leave names with my notes. The late Dr. Gay brought me several. I cannot give the name of any other person here. I have found strychnia in three cases. I have read on the subject of poisons since the preliminary legal examination. A part of the experiments and a part of my notes have been made since that examination. I was correct when I stated that all that relates to the experiments were made as the experiments progressed. I keep books in which I make entries of analyses, but those for poisons are distinct from these. I have not been called upon to show these notes to the counsel for the defence; I have been written to for a report I made to the solicitor.

I received the package about 2 o'clock, P.M., March 16th. Commenced the analysis March 19th. I wrote the note to Mr. Morrison on the 24th. I had then completed the analysis so far as to discover strychnia. I think I had then formed the salts of strychnia. The experiments for detecting strychnia were carried on at the same time with others for separating it. The first step was to discover it. I used alcohol to obtain solution. I produced crystals from the ethereal solution of the crude mass of the matter dissolved from the stomach.

Strychnia is obtained from nux vomica; is a strong base, almost an alkali. There are a large number of organic bases; some of them are more soluble than others in water, generally slightly soluble in water. I think they are not all precipitated by alkalies

alone. I think the correct statement would be, that they are all precipitated by the alkalies or alkaline earths. There is a marked indication of intense bitterness in strychnia, different in kind also from that of other substances. There is a peculiarity in the precipitates by the alkalies. The simple fact that it crystallizes or precipitates, is nothing when considered alone. Crystals of strychnia are in different forms—prismatic, and four sided, or regular octohedrons. I don't remember another alkaloid that crystallizes in the two forms. Modified solvents produce different secondary forms. Rapid evaporation produces feathery crystallization.

In the color tests, I used different oxidating bodies. Produced colors in different ways. It makes no difference in the result, but a difference in delicacy is found. The same colors are not produced from other substances in the same way. I regard the color test as a valuable test. They were made in open day-light. It may be found stated in some books that the color tests are too fallacious. Dr. Taylor says they are so when used alone, and I am of the same opinion.

Nitric acid was never a test for strychnia. The tests with strychnia from other sources were confirmatory. The vessels were all tested to see that they were clean. The first thing was to determine if strychnia were present. I believe it had passed into the tissues and vessels of the stomach. Dr. Taylor is an eminent authority. He does not lay it down that strychnia cannot be found in the tissues of the stomach. I have the most of what I obtained here. I have not experimented with it upon animal life. That is a physiological experiment.

I have examined, I think, thirty stomachs for strychnia within the last ten years, in connection with analysis for other poisons. I have no assistant in my laboratory.

Re-called.—I have increased the amount of my information through my experiments and reading since this case engaged my attention. One half a grain, English, may be considered a mortal dose of strychnia. Death generally ensues within two hours after symptoms commence, i. e. after the tetanic spasms begin. If half a grain were given dissolved in spirits, upon an empty stomach, I think it would destroy life in three hours. I have made experiments upon animal life since yesterday. I used the sample shown the jury as crystals of sulphate of strychnia, dissolved in water. The solution was introduced into the stomachs of two frogs. The usual symptoms of strychnia poisoning were exhibited by these animals in a remarkable degree. The spasms, convulsions and contractions had the well-marked characters, and the animals died one within the hour and the other in about three fourths of an hour. That used was what was exhibited to the jury yesterday. The frogs were not rigid this morning. The observations were made upon five different animals, two of which were treated with the

substance found in the stomach, and three with other strychnia, and the results were the same.

Dr. Hubbard, re-called.—Assisted Dr. Hayes in the experiment. It produced spasms of muscles, twitchings, and resulted in death. There was less than half a grain in all.

Since I testified yesterday, I purchased a grain of strychnia, and introduced a portion of it into the stomachs of three frogs. I used about half of it, with the same results as with the substance used by Dr. Hayes, except that death did not ensue for some hours. All of them appeared remarkably limber this morning.

[To be continued.]

ON THE USE OF SULPHUR IN DISEASES OF THE SKIN.

By Prof. F. Hebra, of Vienna.

[Translated for the Boston Medical and Surgical Journal, by Dr. B. Joy Jeffries, from the *Allgemeine Wiener Medizinische Zeitung*, Nos. 47 and 48, 1860.]

Although physicians of *ancient days* knew of the good effects of sulphur in the treatment of various chronic diseases of the skin, and were acquainted with its external as well as its internal use, yet latterly very decided doubts have arisen as to its specific effect, so that the same has taken place with regard to it as did with *mercury* in its relation to syphilis; believers and disbelievers in sulphur carrying on a warm contest.

These opposing views have induced us for a long time past to pay particular attention to sulphur and its various preparations, and to endeavor to ascertain why it has been extolled on the one hand as a specific for *all* skin affections, and on the other hand decried as exactly the reverse.

First of all, we must distinguish between the exhibition of sulphur as an *internal* remedy, and its *external* local use.

How efficacious a remedy sulphur is in diseases of the skin, when taken into the system through the stomach, may, we think, be answered thus. In small doses it is indifferent, and in larger ones, from its bulk, injurious rather than beneficial. The idea of some former physicians that sulphur would, for example, cure scabies only when its external use had been preceded by a prolonged internal one, we proved years ago to be erroneous by direct experiment; for we showed that when patients with "itch" were only given sulphur internally, they did not get rid of their trouble, whilst a small amount of a preparation of sulphur rubbed on externally, where the galleries of the insect were present, cured the disease by destroying the mites. We believe, therefore, that we may consider the question of the activity of sulphur in skin diseases, when employed as an *internal* remedy, as settled.

In the external use of sulphur, we must pay attention to the

preparation itself. As is known, either finely-divided sulphur in the form of flores sulphuris or lac sulphuris is used, or it is combined with soap as sulphur soap, or with alcohol as sulphur paste, or with fat or glycerine as sulphur salve, or in the form of sulphide of lime, sulphide of potassa, or sulphide of soda as a wash or bath. As its other combinations are not pure preparations of sulphur, we shall not consider them here; such as ioduret of sulphur, sulphuret of lead and sulphuret of antimony. We will, on the other hand, say a few words at the close in regard to sulphur fuming.

In order to get at the action of sulphur on the skin, it is first of all necessary to ascertain what are the appearances produced during life, when any one of the above-mentioned preparations is brought in contact with the sound skin, i. e., its *physiological* action.

In this relation we shall find that the different preparations of sulphur, like those of all other remedies, act differently on different skins, but that, nevertheless, the result of the continued use of sulphur is the same with all persons, and that therefore, as respects obtaining certain effects, the question will be, *how long* the particular form of preparation chosen is to be employed; moreover, which form it shall be, and in what amount.

Experience shows that in general, any form of sulphur brought in contact with the skin, produces irritation and then hyperæmia, in consequence of which there is a more rapid formation of epithelium, so that the upper horny layers of the epithelium are thrown off quicker; in short, redness, slight swelling and desquamation follow its use in every case. According to the irritability of the skin and the intensity of the action, so will be the degree of the appearances mentioned. More intense action will naturally occur with those persons who have blond or red hair and a delicate skin, with epithelium holding but little pigment, or with young people or in those whose skin is less resistant from the effect of disease, as chlorosis, tuberculosis, scrofula or syphilis. The hyperæmia will be increased, exudation will take place under the epidermis, showing itself as papules which afterwards change to vesicles, and the continued use of the remedy will finally cause these to burst and their contents to flow out. In short, we shall have those appearances which obtain the name of eczema in its papular and vesicular form. The subjective phenomena of itching will not be wanting, and the scratching it causes will excite still further irritation of the skin.

This action has long been known, and was explained in various ways. Physicians of former days thought that the production of an artificial eczema by sulphur showed that there must have been some "acrimonia sanguinis" or "materia peccans" in the system, which the sulphur set free. These appearances were considered as a beneficial crisis, to be promoted by the continued use of the remedy. If it was the natural sulphur-water which produced this artificial eczema, the latter was called "bath eruptions"

(Badausschlage), psydracia thermalis. The patients were congratulated upon the salutary effect of the sulphur springs they were employing. Hahnemann's whole theory is said to have been based upon this experiment; his maxim "similia similibus" upon the action of sulphur, which produced an eruption like scabies at the same time that it cured the disease.

Time has not, however, confirmed these different theories. Sulphur acts like many other substances and medicinal agents, partly mechanically, partly chemically, so that we can no longer speak of a specific effect purifying the blood of its acrimony, or promoting a beneficial crisis, and still less of any "similarity of effect." Analogous appearances may be produced by the mechanical irritation of the skin by tightly-fitting clothing, bandages, &c., scratching with the finger nails, by the use of tincture of cantharides, croton oil, preparations of mercury, salts of copper and iron, substances containing potassa or natron, strong soaps, tartar emetic, spurge laurel, veratria, nicotia, &c. From this we readily see that sulphur is an irritant to the skin, like very many other substances, to none of which has it occurred to any one to attribute the property of driving out a "materia peccans" from the body.

These results, then, as our basis, teach us that sulphur is one of those agents which produce in the healthy, as well as in the diseased skin, a hyperæmic condition, causing a more rapid formation of epidermis and an increased change of tissue.

As respects the different preparations, we shall find that those have least of the mentioned effect which contain sulphur in its purest state, and it is increased in proportion as sulphuric acid, selenium or arsenic are combined with it, or when the sulphuretted hydrogen compounds are employed (Schwefel Leber). We shall find a great difference in the effect, according as we use an ointment of lac sulphuris or flores sulphuris, or whether we add common sulphur, or purified, to our vehicle, or whether we burn the sulphur and expose the body to its fumes, or wash the skin with a hydrothianate water.

In accordance with what has been said, we must vary the remedy as is indicated in each individual case, and where slight irritation or other effect of the sulphur is desired, for example, the destruction of the mites in itch, we should select the pure preparations rather than those containing sulphuric acid or sulphuretted hydrogen, reserving the latter for cases where a more energetic action on the skin is needed, and a more rapid and thorough change of elementary tissue.

These varying effects of the action of sulphur explain the very contradictory opinions which exist in regard to its benefit in the various affections of the skin. One, for example, who should employ a too strongly irritating preparation of sulphur in a disease due to an inflammatory process, whilst the inflammation was still present, e. g. an acute eczema, would see but an increase of the

existing trouble. On the other hand, another, using the same remedy in a chronic eczema of long standing, could but speak of its beneficial effect. The same opinion would be expressed of the action of sulphur, when the preparation indicated has been *only* so long continued as was needful to produce the desired result, whilst those who think that there can never be too much of a good thing, would learn the injurious action of this remedy. By observing, therefore, its effects, we learn its special indications.

Let us now pass to the individual diseases of the skin, in which experience has shown the preparations of sulphur to be of benefit. We will commence with scabies, and first answer the question, which is the *best* of all the sulphur compounds that have been proposed for the cure of this disease, inasmuch as the destruction of the acarus scabei and the removal of the trouble may be finally obtained by the use of any one of them. To begin with those whose action is *most un*favorable, we should speak of the sulphur fuming, not, it is true, in general use now-a-days, but which still might induce one or another to try it again. The experiments which were made here in our general hospital in the treatment of itch with Carro's sulphur-fuming box, gave such unfavorable results, that they fell quite into oblivion. The average time required for the cure of patients thus treated was 77 days; the reason of which was, that the sulphuric acid generated by the burning sulphur not only killed the mites, but produced such an extended artificial eczema as required a long time for *its* treatment.

The sulphur baths, also, that were formerly considered the best mode of treating scabies, are not to be recommended. They destroy the mites but slowly, do not prevent the development of the eggs, and produce artificial affections of skin.

In this respect the sulphur ointments and sulphur soaps have proved much more beneficial, and the simpler the form of preparation to the exclusion of admixtures, the better. The purified sulphur, therefore, is better than the common.

The solution of the sulphide of lime,* proposed by the Belgian "General staff physician" Vlemingkx, and modified by our Prof. Schneider as we use it in the treatment of scabies, although its action on the skin is rather irritating, still has proved valuable in the cure of itch, from its rapidly killing the mites and thereby avoiding the necessity of its remaining but a short time in contact with the skin, and hence reducing to a minimum its tendency to produce eczema.

The success which we have obtained in the treatment of scabies with the modified solution of Vlemingkx, has induced us to try it in other diseases of the skin, and we cannot but acknowledge to have found in this preparation a valuable addition to our

* The formula is—R. Sulf. citrini, libras duas; calcis vivæ, libram. Coque cum aquæ fontis libris viginti ad remanentiam libraram duodecim. Fluidum refrigeratum filtretur et detur usui.

dermatological therapy. For although we may be able to ameliorate prurigo by the use of schimierseife, tar, cod liver oil, sublimate, or some of the various preparations of sulphur and the sulphur baths, yet with none of them do we gain our end so quickly as with this solution of Vlemingkx. We have therefore, since some little time, continued our experiments with prurigo, following the method recommended by Vlemingkx for the treatment of scabies. The patients with prurigo, like those with the itch, are to be briskly rubbed all over with this sulphide of lime solution, for half an hour, and then lie in a warm bath at least an hour—thus taking, as it were, a sulphur bath by the sulphur from the skin being freed in the water. After this bath, a cold douche is the best to wash off the sulphur, and finally some fatty substance is to be rubbed in to render the skin more pliable.

Even after the first application, the itching troubles the patient much less, and generally disappears entirely after eight days use, whereby the cause of the *scratching* is removed, and therefore no *new excoriations* are produced, so that, by the end of this time, an individual with considerable prurigo will exhibit a much more healthy-looking skin. Unfortunately, in this incurable disease, its whole object cannot be obtained by this preparation; for if we discontinue the use of the sulphur the affection of the skin shortly returns. As, however, this method occupies but a short time, is much more effectual than any other, is moreover agreeable rather than troublesome to the patient, it is at least of use to render this complaint more bearable.

Another skin disease equally difficult to cure, is psoriasis, and one that is generally in vain treated with sulphur baths, ointments and soaps, and only then yields when these are continually kept in contact with the skin, as for instance at such baths as those at Aachen, Baden, and especially at Louëche, where, as we know, baths are taken six and eight hours in continuo.* This disease, psoriasis, will best give way to an energetic use of Vlemingkx's solution of sulphide of lime, according to our repeated observations.

For this purpose we have the solution, by means of a piece of flannel, rubbed briskly into each psoriasis-plaque till the epidermal masses are removed, and slight bleeding shows that the deepest layers of the epidermis are freed and the papillæ exposed. The patient then goes into a bath and remains an hour, after leaving which all the parts which have been so irritated are anointed with some simple fat (cod liver oil), or with tar or unguentum Rochati. These last are not, however, absolutely necessary, for we have repeatedly used Vlemingkx's solution alone, and we let the skin be anointed with oil or smeared with tar only, because, after leaving the bath, there is generally an unpleasant feeling left

* In thermis tanta est voluptas, ut multi per occiduum et amplius eis non egrediantur, sed cibum simul ac somnum in eis capiant.—FABRICIUS HILDANUS.

wherever the irritation of the sulphur rubbing has caused excoriation. These are not, however, absolutely necessary as we said, and it may be confidently asserted that the psoriasis can be cured by the solutio Vlemingkx *alone*.

The use of sulphur in eczema requires the greatest caution. Acute eczema of an inflammatory character, on the face for instance, or in the hollow of the joints of young people, forbids its employment, as we have already remarked, whilst old standing eczema, without inflammatory symptoms, accompanied with great infiltration of the skin and situated on the extremities of adults, will be greatly improved, if not completely cured, by Vlemingkx's solution. The infiltration disappears, the itching ceases, the patient does not scratch the part, and the reddened portions of the skin need only the use of the tar to entirely remove the disease.

It is, however, in the treatment of sycosis and acne disseminata and rosacea that sulphur and its compounds give the best results. We know with what want of success these diseases were formerly treated, and how only after repeated powerful applications they finally slowly yielded. But now, in the preparations of sulphur, we have an agent by which these affections can be readily cured without risk or pain.

Although we have repeatedly tried Vlemingkx's solution, yet we can only recommend it for those cases of extended acne disseminata on the breast or back, occurring in individuals whose skin will bear a very powerful irritation. Hence in sycosis, and those forms of acne which appear on the face, a less intense action of the sulphur is preferable, such as that of lac sulphuris. Although the flowers of sulphur have for a long time formed one of the principal components of some secret remedies, such as Kummerfeld's wash and other cosmetics, and also of some physicians' prescriptions, yet it was at Dr. Zeissl's recommendation that we first tried sulphur in these diseases.

As we have already had a considerable field of observation in this respect, we are happy to repeat that the sulphur has proved a brilliant success in these diseases. We generally use it in the form of lac sulphuris, combined with equal parts of glycerine and alcohol, and after having the parts that are covered with the papules of acne or sycosis thoroughly washed, we let this paste be rubbed in. As there are but few people who would give their whole time to the treatment of a disease affecting the general health so slightly as this, we have found it best to have the inunction made at night before retiring, and have the application, after remaining on over night, washed off in the morning. Whoever will take the time for it, will do better to use the paste night and morning, and so allow it to be in constant contact with the skin. The papules formed by the deep-seated collections of pus, are of course to be freed of their contents, which is best done by punctures through the epidermis down into the corium, or by pulling

out with pincers the little hairs that pierce the papules and pustules. This is to be done before the application of the above-mentioned paste.

No matter how severe the sycosis may be, it will always yield to this treatment. And it is only a question of time and the diligent use of the remedy, to get rid of the affection of which we speak.

The more rapid change of tissue in the epidermis, caused by the sulphur, explains the beneficial effects of the sulphur baths long used in the treatment of pityriasis versicolor. This disease is still confounded with chloasma hepaticum by our cotemporaries in France, and is thought to depend upon an affection of the liver. Its yielding to the continued use of sulphur baths, and the disappearance of the pigmented patches from the *removal* of the *epidermis crowded with fungi*, is again considered a proof of the yielding of the original cause, the hepatic trouble. Although washing with simple soap and water, if it is only thorough and continued, will suffice for the removal of these parasites, yet Vlemingkx's solution will effect this much quicker by producing a more rapid desquamation, and hence is a much better remedy than the use of soap or a solution of borax or sublimate.

We have also used the different preparations of sulphur as ointments or baths, but especially Vlemingkx's solution, in several cases of ichthyosis, in order to remove the thickened layers of epidermis. Yet we cannot give them a particular preference.

And here, from the numerous cases that have come under our observation, we feel ourselves authorized to answer a question which has been much discussed and even proposed as a prize question by the balneological section of the Imperial Royal Society of Physicians of Vienna. The neighborhood of the sulphur springs of Baden, near Vienna, where sometimes intentionally, sometimes from an error of diagnosis, many syphilitic patients are sent, has often given us opportunity to see the effect of sulphur upon this class of patients as well as upon those who have already gone through with a mercurial course, or those who have been otherwise treated.

Judging from these observations, we cannot agree with the idea that has been put forth, that the sulphur bathing recalls into life a latent syphilis that will show itself under new forms. We believe that, under such circumstances, the sulphur baths act like any simple warm or steam baths, solely by the heat. Those, therefore, who have gone through with a course of mercury, have no reason to expect that this will be driven out of the system by the sulphur. And we cannot see that there is any indication for sulphur bathing in these cases, either as a preventive of syphilis or a cure for the effect of mercury. In a word, sulphur baths neither drive syphilis or mercury out of the system, nor do they drive it in.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, MARCH 14, 1861.

THE Annual Commencement of the Massachusetts Medical College took place on Wednesday, the 6th inst., when thirty-nine candidates received the Degree of Doctor of Medicine. Among the graduates were several from the British Provinces, and we are glad to find Boston becoming more extensively known in that region as a place for medical education. The dissertations were very creditable, evincing a careful study of the subjects by the writers. The able address of Prof. Shattuck contained some account of the modes of instruction, and set forth some peculiarities in the organization of the school. It was listened to with marked interest, and we are glad to have been permitted to transfer it to our pages, where it will appear next week, and would commend it to the careful perusal of our readers.

A good deal has been said, at the meetings of the American Medical Association, about the provisions for medical education in our country; and the Massachusetts Medical Society, at a late meeting, appointed a committee to advise with a retired member, who proposed giving a large sum to the Corporation of Harvard University for the endowment of its Medical School. Money may be expended to great advantage, in furnishing medical schools more thoroughly with the means of study and illustration, and in making them more independent of patronage. Our national military and naval schools have the reputation of furnishing more thorough training and teaching than any college in the land, and their entire independence has much to do with this result. Medical scholarships are much needed, and prizes for dissections and dissertations promote a healthy activity, and it is certainly desirable that means should be supplied for these important objects. All medical men must feel a great interest in medical colleges, and a few whose fees exceed their immediate wants gladly contribute towards medical schools, libraries and hospitals. We wish that the liberal in the community were more impressed with the importance of a complete and thorough medical education, and thus were more ready to give and bequeath the funds for such an object. Something has lately been done in our community, and we trust that among the many objects presented, the cause of medical education will not be suffered to be forgotten.

DRUG INSPECTION.—A special meeting of the Councillors of the Massachusetts Medical Society will be held at the Society's rooms, No. 12 Temple Place, on Friday, the 15th inst., at 11 o'clock, A.M., to consider the subject of a more thorough enforcement of the United States "Drug Law." We understand that the same subject is under consideration by the Massachusetts College of Pharmacy, who are disposed to act very efficiently in the case. In New York, the matter has been under consideration by several medical bodies, and the New York College of Pharmacy, and a memorial has been prepared, addressed to the President of the United States, and signed by the

presiding officers of the Medical Society of the State of New York, the New York County Medical Society, the Kings County Medical Society, the New York Academy of Medicine, and the New York College of Pharmacy, which closes with the following recommendations:—

1st. That the candidates be graduates of a regular medical college, or a college of pharmacy; and,

2d. The reference of all candidates to the Medical Boards of Examination of the Army or Navy, whose competency for such duty is well established, who shall report their decisions or selections to the appointing power through their respective departments. It will be remembered that these Boards meet for the examination of candidates for the medical corps of the Army and Navy every year, generally in March, and always in some of the large ports of entry.

State Lunatic Hospital at Northampton.—From the Third Annual Report of the Superintendent of the Third State Hospital for the Insane, at Northamptom, we learn that at the close of the last year there were in the Hospital 233 patients, of whom 98 were males, and 135 were females.

During the present year, 167 have been admitted, of whom 73 were males, and 94 were females. Fifty-five have been discharged, of whom 23 were males, and 32 were females. Twenty-seven have died, of whom 8 were males, and 19 were females, and 3 males have eloped, leaving 315 in the institution at the present date, of whom 137 are males, and 178 are females.

The whole number now remaining under treatment is greater, by 82, than at the close of the last year.

Twenty-seven patients have died during the year, the greatest number of deaths from any one cause being attributable to the gradual wearing away and final exhaustion of the vital powers in cases of chronic mania and dementia, of which we have so large a proportion.

Of the 55 patients discharged during the year, 33 had recovered, 18 were more or less improved, and in 4 there had been no improvement.

The admissions this year exceed those of the last by 74, while the number discharged is 3 less than last year.

There are now in the hospital 178 female patients, and the part of the building allotted to them is filled, and in some parts rather crowded. Yet the ample and well-ventilated dormitories and corridors prevent the usual bad effects of a crowd, and a remarkable degree of health is always enjoyed. The disproportion between the number of males and females existing from the opening of the institution, has constantly increased, and the excess in the number of females now reaches 41.

Of the cases admitted this year, over 60 per cent. have been suffering from the disease for more than a year, some for many years, and the greater part of them must be considered to have passed the period when treatment can be expected to restore them.

From the Report of the Trustees, we infer that the institution, under the management of Dr. Prince, is at present in a most efficient condition, and ranks second to none in the country.

Pseudo-membranes and their Chemical Reactions.—In a communication presented by M. Ozanam to the Academie des Sciences at the meeting held the 14th of January, he showed that the false membranes were not dissolved by pure water, though immersed in it for twenty-five days—that they were dissolved by the use of chlorine in from five to six hours, by bromine in one hour, by iodine in fifteen minutes, by chloride of iodine in five days, by chloride of bromine in from two to three hours, by sulphuric acid in a few minutes, by phosphoric acid they were dissolved imperfectly, by l'eau regale in one hour, by hydro-chloric acid they were only softened, by citric acid were imperfectly dissolved, by lemon juice were softened, potassium (au dixième) twenty-four hours, soda (au dixième) twelve hours, lime water (au dixième) twenty-four hours, by ammonia they were softened, by chlorate of potash they were dissolved in three to four days, by perchloride of iron the membranes were hardened without being disintegrated, by bichloride of mercury they were hardened.

Having indicated the nature and duration of the reactions produced on false membranes by the chlorides, the alkaline bromides and iodides—by the carbonates, borates and phosphates—by cod-liver oil, the mother waters of kelp, glycerine, chloroform and urea, the author adds:—

"Upon consulting the preceding results we may conclude that if it is desired to attack the membranous formations by solvents, the alkalies should be preferred to the acids; and, in the order of their importance, the mother waters (les eaux mères), ammonia, soda, bicarbonate of soda, urea, cyanuret of potassium, chloride of potassa, glycerine, lime water, potassa, chloride of sodium, bromide of potassium, and finally, carbonate of potassa, phosphate of soda, and chlorate of potash, so long extolled.

"If, on the contrary, the disintegrating agents are desired, great efficacy will be found in the use of the chloride of bromine, bromine, and chlorine—and in a less degree iodine, perchloride of iron, bichloride of mercury, and chromium—which harden the false membrane and detach it *en masse*, without breaking up its elements." H. C.

Case of Triplets. *Messrs. Editors*,—On Sunday, the 10th of February, I was called to see a Mrs. B., aged 24 years, who had been married two years, and was for the first time *enceinte*. She told me that she had not been unwell for two and a half months, had no sickness or nausea, but that morning had a slight pain in her back and some appearance of the catamenia. From her appearance, I should have supposed that she was in the fifth month of pregnancy. I prescribed plumbi acet. gr. i., opii gr. ss., to be taken in vinegar and water, and to observe perfect quiet. On the 11th, I was called and found that the membranes had ruptured, but no pain followed, and but little flowing. As there was no cause for alarm, I left her, with directions to send for me whenever she should be in pain. On Sunday, the 17th, I was sent for in great haste, and on arriving found that the fœtus had been expelled, and she was free from pain. I waited for one hour, and then gave ergot, five grains in powder. In about fifteen minutes her pains came on, and after two or three pretty severe ones, another fœtus was expelled, and the pain ceased. I waited for thirty minutes, and gave five grains of ergot, which soon brought on pain,

causing the rupture of another bag of membranes, and immediately a third fœtus appeared, followed by the placenta, with the three cords attached; the placenta being about two thirds of its usual size at the full time, and the last fœtus being the largest, though in neither of them could I clearly distinguish the sex. The patient is now doing well. Yours, &c. JOSEPH S. LANE, M.D.

Janesville, Wis., February 19th, 1861.

HOW TO ENSURE A CONSTANT SUPPLY OF PURE VACCINE.—It will be seen, by the following communication, that a novel expedient has been suggested by the Health officer of Brooklyn, N. Y., in his Annual Report, by which the purest vaccine matter may hereafter be always at hand. This expedient consists in setting apart a cow, whose object shall be the perpetual production of vaccine! Although the credit of this suggestion is generously awarded to our own city, we feel constrained, in an equally generous spirit, to insist that our sister city should have the full benefit of the renown which must accompany the promulgation of this ingenious idea. It is a little surprising, that a brain so fertile as that of the Health Officer should not, for somewhat obvious reasons, have hit upon another animal nearly related to the aforesaid. The lordly beast is indeed less manageable, but has certainly far more endurance, and hence would bear the constant tapping, if not with more humble spirit, certainly with more patience. To be sure, the being continually waited upon, lancet in hand, might have an effect upon his majesty not unlike that produced by certain fiery colors; but habit might correct this natural irritability. At our next visit to Brooklyn, we shall look with no little interest upon this remarkable animal; and it will be a spectacle of no ordinary interest to see it, perhaps, bubbling at every pore with the pure article. Brooklyn must certainly hereafter become the great vaccine metropolis of the country—perhaps of the world.

Messrs. Editors,—I find in the Annual Report of the Health Officer of the city of Brooklyn, N. Y., for the year 1860, the following passage. The writer is speaking of the importance of vaccination, &c. "In order to relieve the minds of parents from any anxiety, in relation to the quality of the matter to be used upon such occasions, and also to meet the wants of the medical profession in this city in this particular, *I would recommend that a cow be set apart and kept at the grounds of the alms-house or elsewhere, for this especial purpose, from which fresh matter could always be obtained.*" "*The authorities of Boston have, for several years, in this manner and with effect, supplied the profession in that vicinity.*"

My object in sending this is to inquire about *that cow* which is kept in Boston. I would like to know *where* it is kept, so that I may visit it when I am in your city again. I think it would also be interesting to the profession in general to know something of the said animal. I would propound a few questions, which I beg you will answer, or get the keeper of the cow to answer. I think it would be interesting to know the age of the cow; how many years she has been kept for that purpose; how often the matter is taken from her, and what is the average quantity obtained each month or year; also how the drain of matter affects the secretion of milk—whether she continues to have offspring, and if so, how are the offspring affected by this state of the mother—whether they are susceptible to the disease, and at what age—whether this matter can be obtained in perfection from a *calf*, and if so, whether Boston could supply them to other cities, &c.

You perceive, at once, that the subject is one of tremendous importance, and it seems to me that the profession in Boston have most wrongly hid their light under a bushel in not publishing a full account of this plan, which works so

well, and which the Health Officer of Brooklyn has now, some how, got hold of, and, at once, published to the world. Yours, respectfully, ***

MASSACHUSETTS MEDICAL COLLEGE.—At the Annual Commencement of the Harvard Medical School, on the 6th inst., the degree of M.D. was conferred upon the following gentlemen :—

GRADUATES.	THESES.
George Jerome Arnold,	*Ventilation.*
John George Blake,	*Fractures.*
Francis Henry Brown,	*Hospitals.*
Sidney Howard Carney,	*Death.*
Charles Monro Carlton,	*Treatment of Acute Pneumonia.*
John Edward Cobb,	*Yellow Fever.*
Benjamin Tower Crooker,	*Post-Mortem Examinations.*
Joseph Whitney Cushing,	*Strictures and Perinæal Section.*
Edgar Everett Dean,	*Etiology.*
Henry Claudius Dean,	*Scarlatina.*
Frank Eli Dow,	*Phthisis Pulmonalis.*
Theodore Willis Fisher,	*Acute Rheumatism and its Complications.*
William Caldwell Flowers,	*Scarlatina.*
Theodore Scott Floyd,	*Surgical Inflammation.*
William Edward Hayden,	*Therapeutics of the Mind.*
Isaac Hills Hazelton, Jr.,	*Against the Theory of the Production of Phthisis by Masturbation.*
William Henry Weed Hinds,	*Pleurisy.*
John Davis Jones, Jr.,	*Climatology of Providence, and the Modes of Life on Disease.*
Henry Allen Lamb,	*Enteric Fever.*
Jarvis King Mason,	*Physiological and Pathological Action of the Mind.*
Alexander McDonald,	*Idiocy*
Francis Le Baron Monroe,	*Insanity.*
Ephraim Bell Muttart,	*Cholera Infantum.*
Abial Ward Nelson,	*Chronic Laryngitis.*
John Pond Ordway,	*Phthisis Pulmonalis.*
Asa Marshall Paine,	*Phthisis Pulmonalis.*
Norbert Provencher,	*L'Homme, considéré sous le rapport du Physique et du Moral.*
William Edmond Rice,	*Anæmia and Chlorosis.*
George Thompson Shipley,	*Mental Surgery.*
Joseph Crandall Skinner,	*Medical Man in Emergency.*
Charles Carroll Street,	*Signs and Symptoms of Pregnancy.*
James Francis Sullivan,	*The Blood.*
Augustus Valentine Tourtelot,	*Bilious Remittent Fever.*
John Fletcher Stevenson,	*Biliary Calculi.*
Warren Webster,	*Dislocations and Fractures.*
Edward Andem Whiston,	*Anæsthetics.*
Sullivan Whitney,	*Functional Diseases of the Stomach.*
John Warren Willis,	*Sequences of Gonorrhœa.*
Theoron Woolverton,	*Transfusion of Blood.*

D. HUMPHREYS STORER, *Dean of the Medical Faculty.*

THE Homœopathic College of New York, says the *Medical Times*, recently held its commencement, on which occasion the President gave the following significant charge to the graduates. We need no other proof of the utter worthlessness of the system which these young men are now deemed qualified to practise :—

"You need not stick alone to Homœopathy ; if that will not cure, try Allopathy. If Allopathy fails, try Hydropathy ; and if you are not then successful, adopt Spiritualism or any other curative means that may be at hand."

It is deeply humiliating to add that this Institution has a charter from the State, and by its diploma places its graduates upon the same legal footing as those of our best medical schools.

NEW YORK OPHTHALMIC SCHOOL.—The Annual Commencement of this institution was held on the 26th ult., in the Fourteenth-street Medical College, in the presence of a large number of students and medical men. Peter Cooper occupied the chair. Dr. Stephenson, the senior surgeon to the institution, made a few preliminary remarks in regard to the organization and success of the institution, and concluded by awarding testimonials to twenty-eight gentlemen, who composed the graduating class.

Dr. J. P. Garrish, one of the surgeons of the Hospital, delivered an excellent address to the students, and the Valedictory was spoken by Dr. Jas. F. Kiernan, of the graduating class.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, MARCH 9th, 1861.

DEATHS.

	Males.	*Females*	*Total*
Deaths during the week,	31	43	74
Average Mortality of the corresponding weeks of the ten years, 1850–1860,	36.9	39.6	76.5
Average corrected to increased population,	..	..	85.3
Deaths of persons above 90,	..	1	1

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumonia.	Measles.	Variola.	Dysentery.	Typ. Fev.	Diphtheria.
14	2	3	4	0	1	0	0	2

METEOROLOGY.

From Observations taken at the Observatory of Harvard College.

Mean height of Barometer,	29.640	Highest point of Thermometer,	73°
Highest point of Barometer,	30.020	Lowest point of Thermometer,	9°
Lowest point of Barometer,	29.450	General direction of Wind,	W.N.W. & W.
Mean Temperature,	34°.07	Am't of Rain (in inches)	0.000

From Observations taken by Dr. Ignatius Langer, at Davenport, Scott Co., Iowa. Latitude, 41.31 *North. Longitude*, 13.41 *West. Height above the Sea*, 585.

	BAROMETER.						THERMOMETER.				SNOW & RAIN.		Mean Amount of Cloud. 0 to 10.
	7 A.M.	2 P.M.	9 P.M.	Mean Height.	Highest Point.	Lowest Point.	7 AM	2 PM	9 PM	Mean Height.	Time.	Measure.	
Monday, Feb. 25	29.59	29.34	29.43				27	41	36				
Tuesday, " 26,	29.59	29.59	29.51				29	52	42				
Wednesday, " 27,	29.59	29.60	29.62				40	59	47				
Thursday, " 28,	29.60	29.54	29.51				45	61	56				
Friday, March 1,	29.47	29.40	29.37	29.423	29.62	29.08	51	63	54	46.2	0 hours, 50 m.	0.05	5.00
Saturday, " 2,	29.22	29.10	29.08				51	58	48				
Sunday, " 3,	29.28	29.27	29.44				34	43	33				

REMARKS.—General direction of wind, W. and S.W. Ice moved on the Mississippi the 21 inst. at 10 o'clock, A.M. Thickness of ice on the Mississippi, 22 inches. Frost in the ground, 10 to 12 inches.

THIS number of the JOURNAL comprises an extra sheet, in order to furnish space for articles from correspondents which could not well be deferred; and the issue for next week will also be enlarged for the admission of Prof. Shattuck's Valedictory, the continuation of Dr. Ware's Lecture, &c.

BOOKS RECEIVED.—Epitome of Braithwaite's Retrospect, Six Parts. Charles T. Evans, New York.—Treatise on Human Physiology. By John C. Dalton, Jr, M.D. Second Edition. Blanchard & Lea, Philadelphia.—Case of Recurrent Anæsthesia of almost the entire Surface of the Body. By John W. Ogle, M D., Assistant Physician to St. George's Hospital, London. (From the Author.)—Description of Cases communicated to the Pathological Society of London during the Session 1859–60. By J. W. Ogle, M.D., Assistant Physician to St. George's Hospital, London. (From the Author.)—Eighteenth Registration Report to the Legislature of Massachusetts, for the year ending Dec. 31, 1859.

DIED,—In this city, March 4th, Dr. William W. Jones, 58 years, 4 months.—March 9th, Dr. John Field, formerly of Athol, 41.—At Westhampton, 27th ult., Dr. William Hooker, 94.

DEATHS IN BOSTON for the weeking Saturday noon, March 9th, 74. Males, 31—Females, 43.—Accident, 2—anæmia, 1—apoplexy, 1—disease of the brain, 1—bronchitis, 3—cancer, 1—carbuncle, 1—consumption, 14—convulsions, 3—croup, 2—debility, 3—diphtheria, 2—dropsy, 1—dropsy of the brain, 5—epilepsy, 1—scarlet fever, 3—gastritis, 1—hæmorrhage (from funis), 1—infantile disease, 2—jaundice, 1—disease of the liver, 2—congestion of the lungs, 1—inflammation of the lungs, 4—old age, 2—paralysis, 2—puerperal disease, 1—sore throat, 1—smallpox, 1—unknown, 6—suppression of urine, 1—whooping cough, 1.

Under 5 years of age, 32—between 5 and 20 years, 0—between 20 and 40 years, 16—between 40 and 60 years, 13—above 60 years, 13. Born in the United States, 51—Ireland, 20—other places, 3.